Clear Creek, Saunders county: on the 18th, the Platte river reached the highest point that has been known at this place during the past sixteen years.

Tecumseh, Johnson county: a very heavy rain storm occurred on the night of the 22–23d, causing the streams in this vicinity to overflow. Bridges valued at 50,000 were washed away; large numbers of hogs and much cattle were drowned, and the crops in the lowlands were badly damaged. The total loss in Johnson county will exceed $300,000.

New Hampshire.—Bristol, Grafton county: on the 20th and 21st the Pemigeewassett river rose nine feet in twenty-four hours, and reached the highest point that has been known at this place for several years.

New Jersey.—Trenton, 29th: the Delaware river at this place reached a higher point on this date than has been known for years. Reports from points above this place state that the recent heavy rains have swollen the streams tributary to the Delaware to a greater extent than has been known during the last twenty years.

Ohio.—Xenia, Greene county: a very heavy rain fell at this place during the night of the 16–17th. The north branch of Shawnee creek overflowed its banks, submerging a number of houses in the vicinity of the creek and flooding many cellars in various parts of this city. Washouts occurred on almost all railroads running into Xenia.

Pennsylvania.—Scranton: the rainstorm on the night of the 18–19th caused considerable damage in this vicinity. A number of business houses sustained heavy losses from having their cellars flooded. Some damage was also done by lightning.

Wyoming.—Cheyenne: the heavy rains of the 16th flooded the business part of the city and caused much damage. All cellars and basements were wholly submerged, and in some parts of the city the streets were covered to depths of from one to three feet. The damage is estimated at $50,000.

ATMOSPHERIC ELECTRICITY.

AURORAS.

On the night of the 30th, an auroral display was observed from New England to Dakota. This was the most extensively observed display of the month, but none of the stations at which it was observed report it as being brilliant. The following reports relate to this display:

Eastport, Maine, 30th.—Faint auroral light at 11 p. m.

Portland, Maine, 30th.—Aurora observed from 7.30 to 11.30 p. m., consisting of a segment of dark haze surmounted by an arch of greenish light, and rose colored streamers.

Mount Washington, New Hampshire, 30th.—An aurora was observed at this place from 9.30 p. m. of the 30th, until 1 a. m. of July 1st. The light extended to an altitude of about 15° and over about 40° of the horizon. Auroral beams and flashes were numerous and brilliant.

Point Judith, Rhode Island, 30th.—A faint aurora was observed at 10:25 p. m., which continued until after midnight.

Provincetown, Massachusetts, 30th.—A faint aurora was visible at this place from 8:45 to 11 p. m.; a few streamers rose to an altitude of 45°.

Oswego, New York, 30th.—An aurora was observed at 10 p. m., consisting of straw color light, which extended to an altitude of about 30°.

Mackinaw City, Michigan, 30th.—A poorly defined auroral light, of pale yellowish color, was observed at 10 p. m.

Duluth, Minnesota, 30th.—An auroral light was observed at 12:05 a. m. of July 1st. It consisted of a pale whitish color, and disappeared during the early morning.

Bismarck, Dakota, 30th.—An aurora was observed from 11 p. m. until midnight, the light extended to an altitude of 15°. This display was also reported by the following stations: Gardiner, Maine; Newport and Lunenburg, Vermont; Cambridge, Fall River, and Rowe, Massachusetts; Southington, Connecticut; Ithaca, and North Volney, New York; Canal Dover, Ohio; Northfield, Minnesota; Fort Madison, Iowa.

Auroral displays on other dates occurred as follows:

1st.—Gardiner and Eastport, Maine; Newport, Vermont; Cambridge, Massachusetts; Tobacco Garden, Dakota.

2d.—Eastport, Maine; Cambridge, Massachusetts; West Washington, District of Columbia; Freehold, New Jersey.

3d.—Burlington, Vermont.

4th.—Lansing, Michigan.

6th.—Fort Madison, Iowa.

7th.—Keokuk, Iowa; Lansing, Michigan.

8th.—Gardiner and Eastport, Maine.

11th.—Bordenton, New Jersey.

12th, 13th, and 14th.—Lansing, Michigan.

15th.—Bordenton, New Jersey; Wilkesbarre, Pennsylvania.

21st.—Clear Creek, Nebraska.

26th.—Fort Madison, Iowa.

27th.—Franklin and LaCrosse, Wisconsin; Moorhead, Minnesota; Clear Creek, Nebraska.

29th.—Dudley, Massachusetts.

THUNDER-STORMS.

Thunder-storms were reported in the various districts on the following dates:

New England.—4th to 8th, 10th to 13th, 17th to 21st, 28th, 29th, 30th.

Middle Atlantic states.—4th to 13th, 16th to 22d, 24th to 30th.

South Atlantic states.—1st, 3d to 26th, 28th, 29th, 30th.

Florida peninsula.—1st to 4th, 6th to 9th, 11th, 12th, 14th, 15th, 17th, 20th, 21st, 24th, 25th, 29th, 30th.

Eastern Gulf.—1st to 15th, 19th to 30th.

Western Gulf.—1st to 10th, 12th, 13th, 17th, 18th, 19th, 21st to 30th.

Tennessee.—2d to 13th, 16th, 18th, 19th, 21st to 26th, 28th, 29th, 30th.

Ohio valley.—2d to 10th, 12th, 13th, 16th to 21st, 23d to 29th.

Lower lakes.—2d to 7th, 9th to 12th, 16th to 19th, 24th, 25th, 26th, 29th, 30th.

Upper lakes.—1st, 2d, 3d, 5th, 6th, 9th to 12th, 16th to 19th, 21st, 23d, 24th, 25th, 27th, 29th.

Extreme northwest.—4th, 5th, 7th, 14th to 17th, 19th, 21st, 22d, 26th.

Upper Mississippi valley.—1st to 12th, 14th to 24th, 28th, 29th.

Missouri valley.—1st to 12th, 14th to 24th.

Northern slope.—1st to 4th, 7th, 9th, 10th, 13th to 23d, 25th, 29th.

Middle slope.—1st to 11th, 14th to 19th, 21st to 24th, 26th, 27th, 28th.

Southern slope.—1st to 4th, 6th to 13th, 16th, 17th, 26th, 27th, 28th.

Southern plateau.—3d, 11th, 20th, 21st, 23d, 25th, 28th, 29th, 30th.

Northern plateau.—10th.

Thunder-storms were also reported from the following states not included in the districts named above:

California.—Angel Island, 8th; Poway, 30th; Red Bluff, 13th, 16th, 17th, 18th.

Colorado.—Fort Garland, 3d, 27th, 28th.

Nevada.—Carson City, 14th; Pioche, 10th, 12th.

Texas.—Eagle Pass, 1st, 2d, 6th, 9th, 10th; Uvalde, 9th.

Utah.—Coalville, 1st, 2d, 3d, 27th, 28th; Nephi, 13th, 16th, 30th; Salt Lake City, 13th, 16th.

The following are some of the most important instances of damage by lightning that have occurred during June:

Hutchinson, Kansas, 6th.—The Hazard Powder Company's magazine, containing 1,300 pounds of powder, was struck by lightning at 3.30 a. m., of the 6th. The explosion which resulted broke nearly all the window-glass in the city and moved several buildings from their foundations.

Worcester, Massachusetts.—During a heavy thunder-storm of the 6th the tower of the Holy Cross College was struck by lightning and set on fire.

Ashland, Schuylkill county, Pennsylvania.—During a thunder-storm on the night of the 8th a large rock on Locust moun-

tain was struck by lightning and shivered to atoms. A house near by was entirely demolished by the flying fragments of rock. Several houses were also struck by lightning, killing one person and fatally injuring four others.

Ravanna, Mercer county, Missouri.—Three men were killed by lightning near this place on the 14th.

Norwich, Connecticut.—At 5.30 p. m., of the 22d, a barn was struck by lightning and consumed by fire in a few minutes.

TEMPERATURE OF WATER.

The temperature of water as observed in rivers and harbors at the Signal-Service stations, during June, 1883, with the average depth at which the observations were made, are given in the table below. Owing to the breakage of the instruments, observations were not made at Milwaukee, Wisconsin, from 3d to 21st, inclusive, and at Wilmington, North Carolina, from 9th to 21st:

Temperature of Water for June, 1883.

STATION.	Temperature at bottom.		Range.	Average depth, feet and inches.		Mean temperature of the air at station.
	Max.	Min.		ft.	in.	
	°	°	°			°
Atlantic City, New Jersey	71.6	58.6	13.0	5	0	67.2
Alpena, Michigan	67	53.8	13.2	11	9	58.7
Augusta, Georgia	87.5	78.3	9.2	7	6	79.0
Baltimore, Maryland	78	66	12.0	9	6	74.6
Block Island, Rhode Island	63.5	53.1	10.4	8	10	64.4
Boston, Massachusetts	64.7	57.0	7.7	20	5	69.0
Buffalo, New York	70.2	55	15.2	10	8	63.8
Burlington, Vermont*	60.6	55	5.6	20	9	.....
Cedar Keys, Florida	88.8	82.6	6.2	12	4	82.1
Charleston, South Carolina	85.1	74.8	10.3	41	4	80.3
Chicago, Illinois	66.2	52.3	13.9	7	6	64.1
Chincoteague, Virginia	80	70	10.0	5	6	70.6
Cleveland, Ohio	72.0	57.3	14.7	14	0	67.3
Detroit, Michigan	68	56	12.0	23	11	67.9
Delaware Breakwater, Delaware	70.8	61.0	9.8	9	7	69.0
Duluth, Minnesota	62.1	43.5	18.6	14	7	59.4
Eastport, Maine	46.1	40.7	5.4	15	5	57.5
Escanaba, Michigan	64.3	47.0	17.3	15	0	59.4
Galveston, Texas	88	79	9.0	12	8	82.9
Grand Haven, Michigan	75.3	63.2	12.1	19	0	62.1
Indianola, Texas	87.5	80.4	7.1	8	3	82.1
Jacksonville, Florida	87.5	78.0	9.5	18	0	80.9
Key West, Florida	89.0	82.3	6.7	16	11	83.8
Mackinaw City, Michigan	61.7	42.4	19.3	13	0	58.9
Marquette, Michigan	51	44	7.0	9	10	57.3
Milwaukee, Wisconsin†	64.4	45.6	18.8	8	0	62.1
Mobile, Alabama	86	76	10.0	16	11	81.3
New Haven, Connecticut	74.7	62.5	12.2	15	2	68.3
New York City	71.5	61.5	10.0	17	1	69.5
Norfolk, Virginia	80.6	70.0	10.6	16	9	76.9
Pensacola, Florida	83.5	75.4	8.1	17	9	80.1
Portland, Maine	58.5	46.0	12.5	18	2	66.4
Provincetown, Massachusetts	71.5	59	12.5	14	0	66.7
Punta Rassa, Florida*	91.0	81.6	9.4	11	0	.....
Sandy Hook, New Jersey	69.6	56.2	13.4	1	7	70.3
San Francisco, California	64.5	56.5	8.0	29	9	59.9
Savannah, Georgia	84.8	75.6	9.2	12	0	81.2
Smithville, North Carolina	84	74	10.0	10	0	77.2
Toledo, Ohio	76.7	60.6	16.1	11	6	69.7
Wilmington, North Carolina†	81.8	72.4	9.4	18	6	73.6

*A station discontinued on the 15th. †Observations incomplete. See text.

OPTICAL PHENOMENA.

SOLAR HALOS.

Solar halos have been observed in the various districts on the following dates:

New England.—8th, 9th, 15th, 16th, 18th, 27th, 29th.
Middle Atlantic states.—2d, 4th, 6th, 21st, 24th, 28th.
South Atlantic states.—3d, 4th, 7th, 10th, 21st, 22d, 24th.
Tennessee.—4th, 7th, 9th, 12th, 15th, 22d, 28th.
Ohio valley.—5th, 15th.
Lower lakes.—3d, 5th, 7th, 8th, 12th, 15th, 21st, 24th.
Upper lakes.—2d, 5th, 8th, 12th, 14th, 15th, 20th, 21st.
Extreme northwest.—2d, 3d, 4th, 7th.
Upper Mississippi valley.—1st, 2d, 4th, 6th, 8th, 12th to 16th, 20th, 23d, 24th, 25th, 28th.
Missouri valley.—3d, 4th, 6th, 7th, 11th, 14th, 16th, 23d, 27th, 28th.

Solar halos were also observed at the following stations not included in the districts named above: Lead Hill, Arkansas, 2d, 4th, 6th to 9th, 17th, 19th, 23d, 27th; Princeton, California, 5th; Sacramento, California, 8th, 17th; San Francisco, California, 8th, 17th; Visalia, California, 1st, 5th, 9th; Prescott, Arizona, 7th, 9th; Pike's Peak, Colorado, 9th; Punta Rassa, Florida, 7th; Pensacola, Florida, 4th, 6th, 9th, 13th, 26th; Lewiston, Idaho, 1st, 5th, 8th; Albany, Oregon, 2d, 22d; Roseburg, Oregon, 2d, 8th, 18th, 22d; Carson City, Nevada, 17th; Indianola, Texas, 3d; Palestine, Texas, 1st, 2d; Bainbridge Island, Washington Territory, 1st, 2d.

LUNAR HALOS.

Lunar halos have been observed in the various districts on the following dates:

New England.—10th, 14th, 15th, 17th, 18th.
Middle Atlantic states.—9th, 10th, 12th, 14th to 18th, 24th.
South Atlantic states.—9th, 10th, 17th, 21st.
Eastern Gulf.—13th, 16th, 19th, 20th, 21st, 24th.
Western Gulf.—11th to 22d.
Tennessee.—12th, 16th, 20th, 22d, 22d, 24th.
Ohio valley.—11th, 15th, 16th, 17th, 20th, 22d, 23d.
Upper lakes.—11th, 14th, 15th, 16th, 18th, 19th, 20th.
Upper Mississippi valley.—14th to 17th.

Lunar halos were also reported from the following stations not included in the districts named above: Visalia, California, 17th; Fort Buford, Dakota, 13th; Sanford, Florida, 11th, 17th; Saint Vincent, Minnesota, 21st; Kiantone, New York, 16th; Albany, Oregon, 14th; Fort Concho, Texas, 12th, 13th.

MIRAGE.

San Francisco, California, 5th.—A beautiful mirage was observed on the bay at 6 p. m., the vessels and the land on the opposite shore assuming peculiar shapes. Small schooners in the northern part of the bay appeared very large, and the shipping and ferry-boats in the harbor appeared with inverted images, one above the other.

New York City, 13th.—On this date a very unusual phenomenon was observed in this city and vicinity. The hulls of vessels assumed prodigious proportions, at times appearing to rise above the hills beyond them. There were many startling changes in the appearance of the familiar Coney Island landscape. At one time the entire village appeared doubled, the buildings being reflected upside down.

Mirage was also observed at the following stations:
Traverse City, Michigan, 29th, 30th.
Indianola, Texas, 3d, 24th, 26th.

MISCELLANEOUS PHENOMENA.

SUN SPOTS.

The following record of sun spots for the month of June, 1883, has been forwarded by Mr. D. P. Todd, Director of the Lawrence Observatory, Amherst, Massachusetts:

Date—June, 1883.	No. of new		Disappeared by solar rotation.		Reappeared by solar rotation.		Total No. visible.		Remarks.
	Gr'ps	Spots	Gr'ps	Spots	Gr'ps	Spots	Gr'ps	Spots	
1, 9 a. m.	0	16‡	0	0	1	0	2	20‡	
2, 9 a. m.	1	5	0	0	1	2	3	25‡	
4, 11 a. m.	1	25‡	0	0	0	0	4	50‡	
4, 4 p. m.	0	0	0	0	0	0	4	50‡	
5, 12 m	0	0	0	0	0	0	4	50‡	
5, 6 p. m.	1	5	0	0	1	5	5	55‡	
6, 12 m	0	0	0	10‡	0	0	5	45‡	
8, 12 m	1	10‡	1	20‡	1	10‡	5	30‡	
9, 10 a. m.	0	0	0	0	0	0	5	30‡	
10, 12 m	0	0	1	5	0	0	4	15‡	
11, 6 p. m.	1	2	2	3	1	2	3	14‡	
12, 12 m	0	0	1	2	0	0	2	12‡	
15, 2 p. m.	1	2	0	0	0	0	3	14‡	
16, 9 a. m.	0	0	0	4	0	0	3	10‡	
17, 12 m	2	4	0	0	1	2	5	14‡	
19, 5 p. m.	0	15‡	1	5	0	0	4	25‡	
20, 12 m	0	15‡	0	0	0	0	4	40‡	
21, 12 m	0	10‡	0	0	0	0	4	50‡	
22, 11 a. m.	1	3	0	10	1	3	5	40‡	
23, 12 m	0	5	0	5	0	5	4	40‡	
24, 12 m	1	7	1	5	0	5	4	40‡	
25, 4 p. m.	2	10‡	0	0	2	10‡	6	50‡	
26, 12 m	0	0	0	5	0	0	5	40‡	
28, 12 m	0	10‡	1	5	0	0	4	45‡	Two of spots quite large.
29, 11 a. m.	0	5	0	0	0	0	4	50‡	Do.
30, 9 a. m.	0	0	0	5	0	0	4	45‡	Do.

Faculæ were seen at the time of every observation. ‡Approximated.

Mr. H. D. Gowey, at North Lewisburg, Ohio, reports that sun spots were observed on all clear days during the month.